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WT Docket No. 97-112
CC Docket No. 90-6

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TABLE OF CONTENTS

Summary	i
I. INTRODUCTION	2
II. ARGUMENT	3
A. The Commission's Presumptions Regarding Build Out Of The Land-Based Carriers Fail To Take Into Consideration The Impact Of The Lack Of Resolution Regarding Critical Extension And Unserved Area Issues	3
B. Operators Should Be Permitted To Continue Existing SAB Extensions Into The Coastal Zone.	4
C. The Placement Of Land-Based Facilities In The CGSA Of A Land-Based Carrier By GMSA Carriers Is Technically Infeasible And Violates The Conditions Of The Licenses And Relevant Rules	5
D. The Proposed Coastal Zone Should Not Be So Broadly Defined That It Creates Unnecessary Expense For The Public	7
E. Unserved Area Applications and Other Issues	9
III. CONCLUSION	10

SUMMARY

Southwestern Bell Mobile Systems, Inc. ("SBMS") is licensee through its subsidiary Southwestern Bell Wireless Inc. ("SWBW"), who is also general partner of partnerships in multiple land-based cellular markets bordering the Gulf Coast of Texas. As such, the controversy over the provision of cellular service to that area has complicated the provision of optimal service to its customers and has created artificial constraints that have made it difficult to engineer and design a cellular system that provides reliable service and permits new innovations. Resolution of these controversies with the Gulf based carriers ("GMSA") is a laudable goal set by this Notice of Proposed Rulemaking ("NPRM").

However, it is imperative that the Commission not create a class of service providers (the GMSAs) with rights and privileges that exceed those of other cellular providers to the detriment of their land-based competitors and the customers of these carriers. For instance, permitting GMSAs to place cell sites within the CGSA of the land-based carriers is an example of such unprecedented privilege that would inevitably create interference, confusion and more controversy, all to the detriment of the public.

The Commission is correctly assessing that previously approved extensions into the Gulf should continue, and that rules should be developed regarding unserved areas. However, those rules should not eliminate the Phase I stage of the unserved area rules, which have been applied consistently in the cellular arena.

The appropriate result of this NPRM is to resolve longstanding disputes with fairness to both land-based and GMSA carriers and with little disruption and inconvenience to the public.

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I. INTRODUCTION

The Commission's stated purpose behind this NPRM is to *reduce* conflict between land-based and water-based carriers, but some of the proposed rules, as written, will inevitably *increase* that tension and create interference issues and confusion, all against the public interest. The Commission's goal to create coastal zones that maximize service to land-based and water-based customers, is laudable. It is the execution of that goal and the presumptions behind some proposals that are problematical. For instance, the Commission proposes permitting land-based transmitters by Gulf Coast carriers (GMSA carriers), claiming the existing prohibition is obsolete. Not only would this create significant interference issues, it would also delay the introduction and expansion of the new services and technologies that require stringent coordination in the digital environment. Delaying or preventing these services is not in the public interest.

The licenses issued by the Commission to licensees contain the following condition:

“Moreover, any facility authorized herein with a service area boundary (SAB) extending into the CGSA of any other operating cellular system on the same channel block . . . is subject to the following condition: In the event that the licensee of the other cellular system requests that the SAB of the facilities authorized herein be removed from its CGSA, the licensee herein must reduce transmitting power or antenna height (or both) as necessary to remove the SAB from the CGSA unless written consent from the licensee of the other cellular system, allowing the SAB extension to remain, is obtained.”

See further 47 CFR 22.911(D).

By adopting some of the rules as proposed, the Commission would be rewriting the conditions imposed on all licensees by both the license terms and existing rules, all of which protect significant interests of the public in obtaining interference-free, reliable service. This creates,

rather than reduces, controversy and conflict.

II. ARGUMENT

A. The Commission's Presumptions Regarding Build Out Of The Land-Based Carriers Fail To Take Into Consideration The Impact Of The Lack Of Resolution Regarding Critical Extension And Unserved Area Issues.

The NPRM in large part bases its tentative conclusion to permit land-based transmitters by water-based carriers on the fact that the RSA market has been built out and the Gulf region is "mature." What this presumption fails to consider is that the land-based carriers have been in virtual limbo regarding build out and modification of their systems because of the lack of resolution of critical issues regarding major modifications and petitions to deny. The MSA markets (e.g., Corpus Christi, Brownsville-Harlingen) are frozen in time at a snapshot taken when the SIU maps were filed, five years ago. Since that time, land-based carriers have been unable to have modifications approved that involve extensions into the Gulf. This prevents the land-based carriers from responding to increasing customer counts and mobility and usage shifts with appropriate engineering solutions. (Exhibit 1, Affidavit of Hugo Hernandez).

Because of this failure to resolve the Gulf issues, the RSA build outs were likewise impeded.² Systems had to be constructed to be virtually co-terminus with the coastline. (See Exhibit 2, System maps for Texas 19, Texas 20). Given the propensity of radio signals to skip across a water surface, RSA builders were forced to set artificially low power levels in order

²See Modification pending market 670, Texas 19 - Atascosa, File number 02245 CL MP 96 (3/15/96).

to minimize this phenomenon. (Exhibit 3, Affidavit of Charles Kriz, Exhibit 4, Affidavit of Leroy Adams). This resulted in insufficient power levels to meet the needs of the public while on the land, and opened land-based carriers to having their customers set up calls on the powered-up sites of GMSA carriers, thus, incurring roaming charges in the customer's home market. *Id.* Therefore, the presumption of a well reasoned and optimally engineered build out is based upon faulty logic. Build out, as well as existing service, has been negatively influenced by the longstanding issues the Commission is now attempting to resolve.

B. Operators Should Be Permitted To Continue Existing SAB Extensions Into The Coastal Zone.

While the MSAs have extensions into the Coastal Zone that are not large in size, these extensions are significant to service. (Exhibit 4, System maps for Corpus Christi, Brownsville-Harlingen). Therefore, the Commission's preliminary conclusion that the public interest is best served by allowing SAB extensions that were properly granted to continue, is correct. (See Exhibit 4, Affidavit of Leroy Adams). To do otherwise would severely impact the public interest. For instance, the community of Mustang Island, a favorite vacation site in Texas, would be left with signal strength below -100 dbm. (See Exhibit 3, Affidavit of Charles Kriz). This strength does not permit reliable service.

The Corpus Christi MSA would be forced to shut down three sites, and significantly reduce power to two more sites. *Id.* Texas RSA 20 would have to significantly reduce power to a site that is currently responsible for 16.47% of the total traffic in the market. *Id.* Brownsville-Harlingen MSA would have to shut down a site responsible for 12.5% of the total

traffic in the MSA. This same site also provides service to South Padre Island, a popular vacation and condominium area, and would thus plunge the Island to a signal level below -100 dbm. Id. Because of the problems discussed, supra, the service in many of these areas is barely meeting the needs of the public. A further incursion could result in no service at all to the public. Accordingly, these extensions should be continued. The Commission requested comment on whether the same formula should apply to all contours, whether land or water-based. The same formula should be used since coverage will have essentially the same propagation characteristics. (See Exhibit 4, Affidavit of Leroy Adams).

C. The Placement Of Land-Based Facilities In The CGSA Of A Land-Based Carrier By GMSA Carriers Is Technically Infeasible And Violates The Conditions Of The Licenses And Relevant Rules.

Based in part on the faulty presumptions discussed in Part A, supra, the Commission proposes to permit GMSA carriers to place land-based facilities within the CGSA of land-based licensees in contravention of its longstanding policies, rules and licensing conditions.

This is a rule of first impression. Carriers have long entered into contract extensions with neighboring carriers pursuant to 47 CFR 22.912(b). These are negotiated agreements which permit the carrier upon whose territory an incursion is being proposed to ensure there is sufficient coordination and planning to prevent capture of its traffic. Co-licensing or collocating also require detailed agreements. But there has never been an absolute right for a carrier to set up an antennae within the CGSA of another carrier. De minimis extensions are

permitted under the rules,³ so long as the extensions are demonstrably unavoidable for technical reasons of sound engineering design and do not extend into the CGSA of any other licensee's cellular systems on the same channel block without consent. There are sound public policy reasons behind these requirements. Such reasons will be usurped by the proposed rules if the Commission intends to grant an entitlement to these land-based placements. The engineering crucible created by such an entitlement is that GMSA carriers will logically select land sites near the coast where the land-based carriers have been forced into lower power outputs by the historical inability to modify or construct with Gulf incursions. (See Exhibit 4, Affidavit of Leroy Adams). Therefore, the GMSA site will have superior power over neighboring land-based sites. This will create call set-up problems, co-channel interference and inadvertent roaming scenarios within a caller's "home" market. (See Exhibit 1, Affidavit of Hugo Hernandez). This concern is heightened by the GMSA carriers historical reluctance to participate in the fundamental frequency coordination engaged in by cellular carriers on an on-going basis.

Further, as SBMS introduces IS-136 capability into these markets, the potential problems increase exponentially. Id. The deployment of DCCH (Digital Control Channel) requires a more strict carrier to interference ratio than analog systems. Id. IS-136 will make available to the public many advances such as short messages service, sleep mode, extended battery life, Caller I.D., fraud prevention, and is a key component to meeting PCS competition. Id. However, implementation requires a new frequency plan with 58 channels

³47 CFR 22.912(a)

that must be cleared from the analog frequency plan. Id. This is in addition to “fine tuning” sites with neighbors in order to minimize RF penetration. Id. Therefore, the Commission's proposal is not nearly as simple and progressive as it sounds. At a minimum, stringent restrictions on interference and frequency coordination must be imposed. The better solution is to require consent of the land-based carrier who can thus ensure all coordination matters are resolved in advance, encourages carriers to negotiate reciprocal extensions that benefit rather than befuddle the public, and enables a carrier to fulfill the conditions of its license.⁴ Also, see Exhibit 4, Affidavit of Leroy Adams.

D. The Proposed Coastal Zone Should Not Be So Broadly Defined That It Creates Unnecessary Expense For The Public.

The inland waters of the Gulf along the Corpus Christi shore and down the Brownsville, Texas coastline are mainly used by recreational and commercial fishermen. According to the Texas Almanac, the Texas Gulf comprises approximately 4,000,000 acres of saltwater and bays reaching about 9 nautical miles into the Gulf.⁵ These waters annually are used by approximately 20,000 commercial fishermen and an estimated 1,000,000 recreational fishermen. Id.

⁴“Moreover, any facility authorized herein with a service area boundary (SAB) extending into the CGSA of any other operating cellular system on the same channel block . . . is subject to the following condition: In the event that the licensee of the other cellular system requests that the SAB of the facilities authorized herein be removed from its CGSA, the licensee herein must reduce transmitting power or antenna height (or both) as necessary to remove the SAB from the CGSA unless written consent from the licensee of the other cellular system, allowing the SAB extension to remain, is obtained.”

⁵Texas Almanac, 1996-97, pp. 100.

Land-based carriers can economically serve much of this area. (See Exhibit 1, Affidavit of Hugo Hernandez, Exhibit 4, Affidavit of Leroy Adams).⁶ The public would have the advantage of home rates for residential customers, and negotiated roaming rates for other traffic. Customers of SBMS have complained of exorbitant rates charged by GMSA carriers during recreational boating expeditions. Id. In many cases, customers report they dial a 7 digit number and then receive a large bill from a GMSA carrier who charges as if a 10 digit “toll” call had been made. Id., Exhibit 1. While customers express their frustration at these inflated rates, SBMS is powerless to assist. By pulling the proposed Coastal Zone back to the proposed Exclusive Zone, these customers could receive adequate service at reasonable rates. SBMS therefore recommends the Exclusive Zone serve as the boundary. (See Exhibit 4, Affidavit of Leroy Adams).

Uniform boundaries lend themselves to easy and unambiguous definition and interpretation. Such boundaries would eliminate the cumbersome task of defining to every interested parties satisfaction all the would-be variations in the boundary, follow-on documentation of the boundary, and case-by-case studies concerning SAB encroachments. Id.

A level of conflict will exist regarding the definition and imposition of any “after-the-fact” boundary. Such conflict can be expected in the Gulf markets but a clear, unambiguous boundary and rules which are clearly stated will minimize them. The economies and efficiencies thus realized can benefit the public both directly (less costly service) and indirectly (less government involvement). Id.

⁶See Exhibit 4, page 2, regarding the approximate distance from shore over which a land-based transmitter can provide reliable coverage.

Consistency with existing rules will also contribute to the economies and efficiencies described above. Whether or not a "Coastal Zone" is created, a uniform boundary is consistent with the manner in which original cellular market boundaries were defined. A provision to allow water-based and land-based service area boundaries that extend across the market boundary to be incorporated into the CGSA of the carrier currently providing the service would eliminate the need for non-uniform boundaries in the vicinity of high density areas and would be consistent with current rules. Id. Where no service exists the uniform boundary would remain.

Areas remaining unserved should be treated in accordance with the rules pertaining to unserved area, including the Phase I portion of those rules.

E. Unserved Area Applications and Other Issues

SBMS agrees that the proposal to permit resubmissions for unserved areas within the Coastal Zone following adoption of the new rules is reasonable, as is the competitive bidding solution for mutually exclusive applications, but only after incumbents are given the opportunity for optimal use of unserved area under Phase I rules, as has been the rule in all other cellular areas. Skipping Phase I is unfair to incumbents and does not serve the public interest.

The proposal in paragraph 44 of the NPRM is badly reasoned and bypasses the longstanding rules of service area boundaries and CGSA. See Argument, supra. (See Exhibit 4, Affidavit of Leroy Adams). Paragraph 45's proposal to modify the definition of SAB extensions is appropriate as is the proposal in paragraph 47. Id.

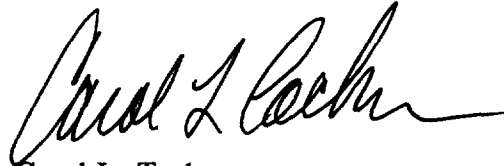
The proposal to draft separate orders for pending applications for land-based transmitters could create a problem if the Commission were to base a decision in favor of an application based upon prospective rules that were not in existence at the time of filing.

For reasons of regulatory parity, SBMS supports efforts to adopt licensing and operational rules for non-cellular CMRS in the Gulf. These rules should be comparable to those affecting cellular carriers.

III. CONCLUSION

The NPRM is an ambitious attempt to solve longstanding disputes. SBMS supports the resolution, but cautions the Commission to avoid a rush to a conclusion that sacrifices improved network reliability, lack of interference and new customer options to placate a segment of the cellular community.

Respectfully submitted,



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EXHIBIT 1

AFFIDAVIT OF HUGO HERNANDEZ

STATE OF TEXAS

COUNTY OF BEXAR

Hugo Hernandez, being duly sworn, deposes and states:

1. My name is Hugo Hernandez. I am over 21 years of age and am legally and mentally competent to make this affidavit. The facts stated herein are true and correct and are within my personal knowledge. I am a Manager-System Engineering in the RF Design Group for Southwestern Bell Wireless, Inc., (SWBW) South Texas Region, and office out of San Antonio, Texas. I have been engineering the design of cellular systems since 1990. I have a Bachelor of Science Degree in Electrical Engineering from the Universidad Autonoma de Nuevo Leon, Monterrey, Mexico. In this capacity, I supervise and oversee the daily work of three Radio Frequency (RF) design engineers and work daily with applying the standards for determining reliable cellular service along the Texas Gulf coastline.
2. In an effort to provide comments to the Federal Communications Commission's Second Further Notice of Proposed Rule Making in WT Docket No. 97-112 and CC Docket No. 90-6, specifically, to Section III, Paragraph 40, I have conducted studies utilizing the CNET cellular system database.
3. The following analysis is based on the Southwestern Bell Wireless Prediction Tool called WINGS (Wireless Network Graphics System) from CNET. SWBW in the South Texas Region, which includes the following markets that encompass part of the Texas Coastline, uses the Prediction Program TIREM (Terrain Integrated Rough Earth Model) for the design of new and existing cell sites in this area.
4. This program computes path losses incurred between a fixed base station location and evenly spaced sampling points in the vicinity of the site. TIREM is derived from the NTIS (National Technical Information Service) Master Propagation System TIREM-11 implementation. TIREM analyzes the radio path geometry between a base station site and a mobile unit location within the study area. Based on intervening the terrain culled from a digitized terrain database, TIREM determines the factors which control radio propagation for the path. These path geometry calculations are performed for all points in the designated study area. Attenuation factors can be summed with this information giving the engineer a complete, detailed analysis of the expected coverage from a particular site. In this case no additional attenuation factor was added.
5. The proposed locations were used from previously filed Coastel data. The specifications of antenna type, antenna centerlines and ERP are based on the SWBW engineering standards. These two sites were previously proposed by Coastel to be located on piers along the coastline and immediately adjacent to the SWBW Corpus Christi CGSA (Corpus Christi SMSA Limited Partnership—Market 112-B1).

Figure 1 shows the most likely server coverage analysis plot based on the TIREM model.

Color	Signal Level		Description
Green	-70.0 dBm to	- 0.0 dBm	In Building Hand-held
Marine Blue	-80.0 dBm to	-70.1 dBm	Hand-held
Light Blue	-90.0 dBm to	-80.1 dBm	Suburban
Magenta	-100.0 dBm to	-90.1 dBm	Rural/Installed Unit
Yellow	-105.0 dBm to	-100.1 dBm	Weak Signal
Red	-110.0 dBm to	-105.1 dBm	No Service/Dropped Calls

6. Figures 2 and 3 show the most likely server coverage analysis plot with SWBW and each of the two proposed Coastel sites. The antenna selection, ERP, antenna centerlines, and azimuths are one of the possible "best case scenarios" from the SWBW standpoint. This means that the selected antennas are pointing in the direction of the Gulf of Mexico and not back unto land. However, the back and the side lobe of the antennas allow these proposed sites to be the most likely server in the highlighted areas.

As can be seen, the downlink signal levels on land are significantly high. This means that SWBW customers may be setting up calls on a foreign cell site; in this case Coastel 1 and Coastel 2. By setting up calls on a different system, the SWBW customer will be paying roaming charges in their home service area.

7. Figure 4 shows a "Composite Best Server Plot" for the proposed Coastel 1 and Coastel 2 cell sites. As described above, the SWBW customer will be affected in areas where Coastel 1 and Coastel 2 are the best server sites. This areas are highlighted in the plots.

8. By allowing GMSA carriers to place transmitters on land, the interference problems will increase significantly. In this particular example, the SWBW Corpus Christi market is a mature cellular system where the spectrum reuse factor has increased in the past few years. To better control the C/I and the frequency reuse, the Corpus Christi market has increased the number of sectorized cell sites. Also, more sites are being modified from their prior configuration by decreasing the ERP, using mechanical and electrical downtilt, etc. The current performance of the system is being monitored on a monthly basis utilizing different kinds of equipment. Reports of quality are produced to measure the system overall quality.

By adding transmitters from other carriers with strong signals, like the ones shown in Figures 2 and 3, the chance of co-channel interference will increase, causing cross-talk and dropped calls, setup glares (different cell sites with the same control channel), and call setup problems.

9. Additionally, if Coastel were to place a cell site in this area, there is the distinct possibility of SWBW mobiles overdriving the preamps in the Coastel site. The mobiles could operate at full power near Coastel's receiving antennas, thereby overdriving their preamps and causing cross-talk and/or dropped calls for the mobiles being served by the Coastal land-based cell. No matter what kind of "special configuration" the new cell site may have, by this I mean directional antennas pointing into the Gulf of Mexico, there will be some areas where the "foreign carrier" (GMSA) will be stronger than the inland Carrier, thus causing the problems described above.

10. Complaints from customers in the South Padre Island (Brownsville-Harlingen MSA) indicate that the GMSA carriers are not requiring 10 digit dialing for SWBW or other land-based customers who are roaming on their systems. The effect is that when an SWBW customer places a 7 digit call and is connected through the GMSA facilities, he is billed at higher rates.

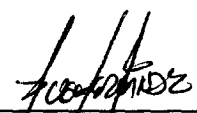
11. SWBW is moving toward the CDPD (Cellular Digital Packet Data) and IS-136 (TDMA). For SWBW, IS-136 is a key network development. The deployment of DCCH (Digital Control Channel) will require a more strict C/I (Carrier to Interference) ratios than FDMA (Analog system). DCCH will likely be deployed in the Corpus Christi and Brownsville/Harlingen areas in early 1998. Services like SMS (Short Message Service), Sleep Mode, extended battery life, Caller ID, Fraud prevention, and Public/Private system differentiation will be provided via the DCCH implementation.

12. In order to implement DCCH, it will require a new frequency plan (Alternate K=7) for these areas. Fifty eight channels (58) from the expanded band channels 767-766 have to be "cleared" from the existing analog voice frequency plan. If another RF carrier in this range is on the air without the home market being informed as to its existence, it will create additional problems and different problems in this digital environment, such as BER (Bit Error Rate), increase in the setup failures and increase of dropped calls.

13. CDPD and Circuit Switched Packet Data are also going to be deployed in these Markets to implement new data features for our customers. This will require additional management of the frequency blocks assigned to this service. Some of the data services are still under development and at this point we do not know how critical the frequency assignments will be.

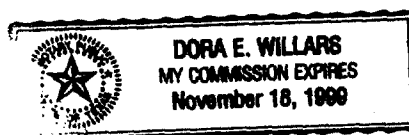
14. Again, if all these new services are going to be provided in the near future, frequency assignment and frequency coordination with neighboring markets is critical in order to minimize interference into each other. Frequency assignment is not the only issue with neighbor markets. We dedicate a lot of time "fine tuning" our sites with neighboring carriers like Telcel and GTE by changing antennas, increasing the mechanical or electrical downtilt, utilizing different kinds of antennas, etc., in order to minimize the RF penetration into our markets. Any placement by other carriers of sites in our CGSA's will result in unacceptable interference.

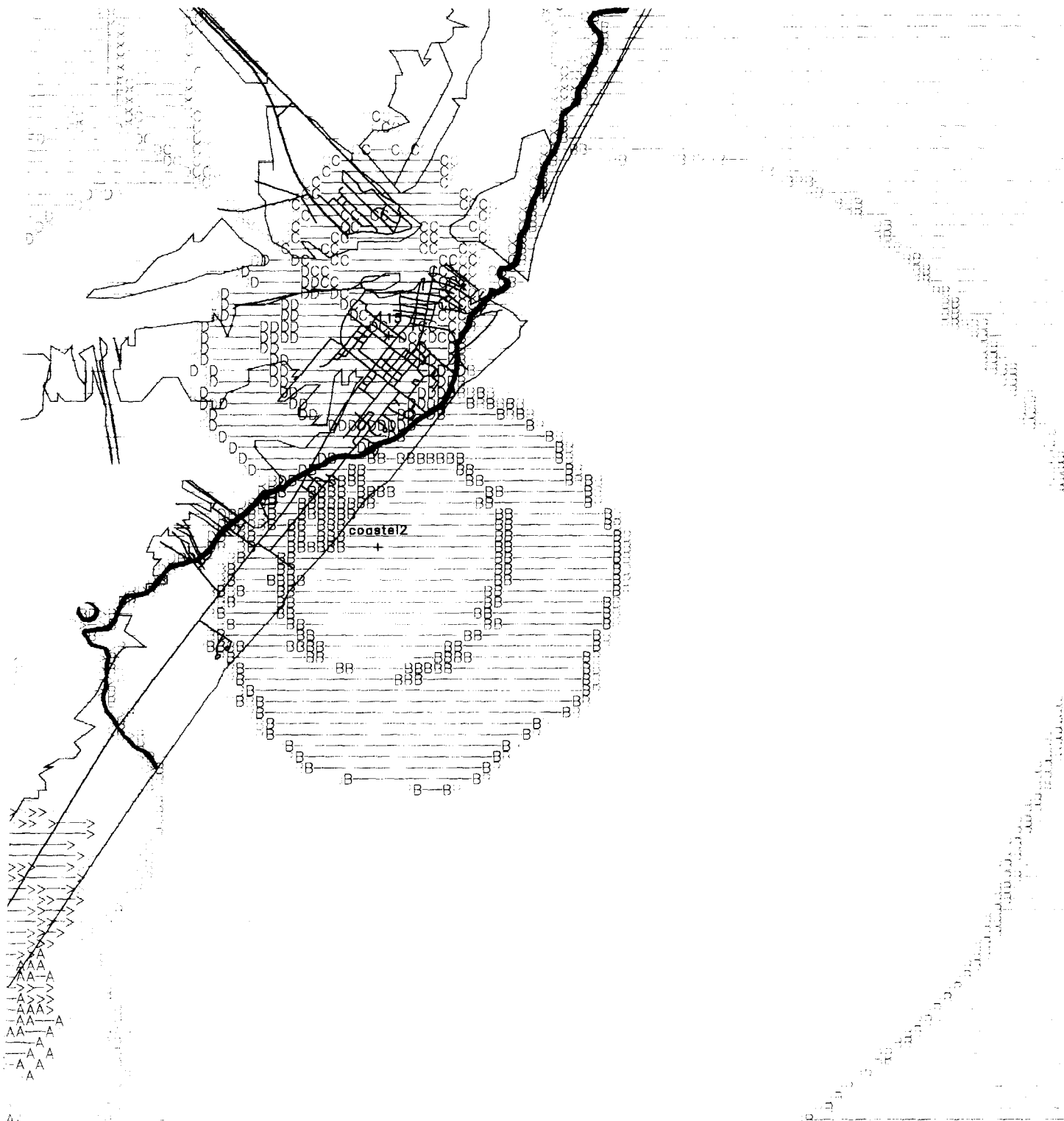
Attachments: Figure 1
Figure 2
Figure 3
Figure 4


Hugo Hernandez

Subscribed and sworn to me this 29th day of May 1997.


Notary Public





Plot Lower Right: 27-43-55.0 N, 88-58-01.9 W
Plot Upper Left : 27-52-32.3 N, 87-07-07.6 W
Plot Scale : 1:45113.0
Plot Projection: Lambert Conformal Conic Projection

Most Likely Server Coverage Analysis

	Period	Region	Country	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000
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Ppt. Description **D number**

11:00 am to 1:00 pm Mr. Ray/Thom Co.

7-1	to	-90	-8-	Part I
7-2	to	-90	-8-	2-5-1966
7-3	to	-90	-8-	In - Building
7-4	to	-90	-8-	Cover Garage

DLC Attributes:

_____	Primary
_____	Secondary
_____	Class 3 Books
_____	Class 4 Books
_____	Grade 5 Books

SCALE 1:48118
1 inch = 0.7120 Miles
1 Centimeter = 0.4811 Kilometers
MILES

KILOMETERS

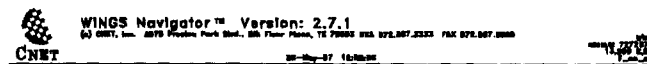
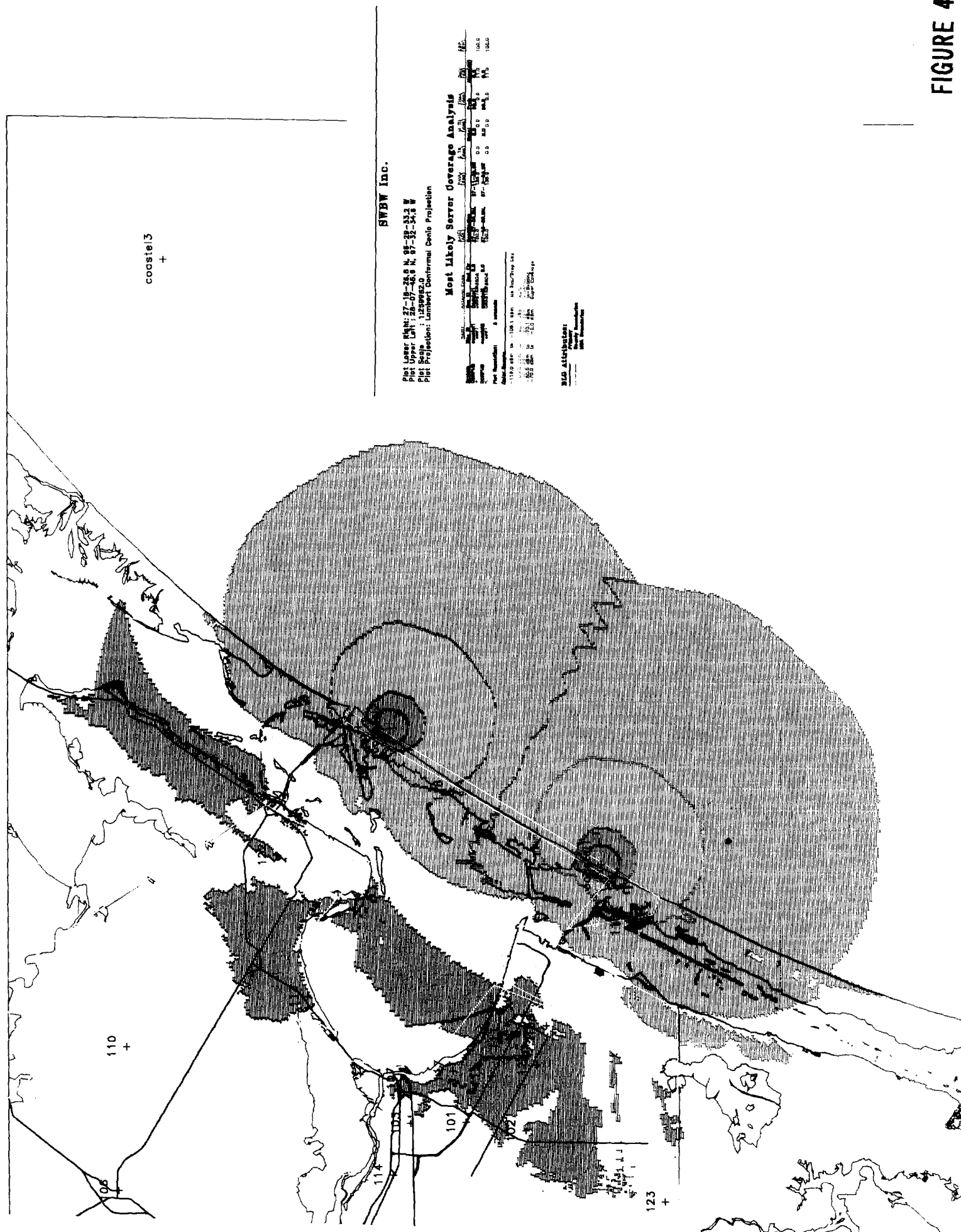


FIGURE 3



SWBW Inc.

Plot Lower Right: 27-18-28.8 N, 96-29-53.2 W
Plot Upper Left : 26-07-45.8 N, 97-32-54.8 W
Plot Scale : 1:250000
Plot Projection: Lambert Conformal Conic Projection

Most Likely Server Coverage Analysis

[illegible]

Post Mortem **5 weeks**

Index Sample

[illegible]

70.6

土曜日の午後、
三軒茶屋の
三軒茶屋の
三軒茶屋の

APPENDIX

EXHIBIT 2

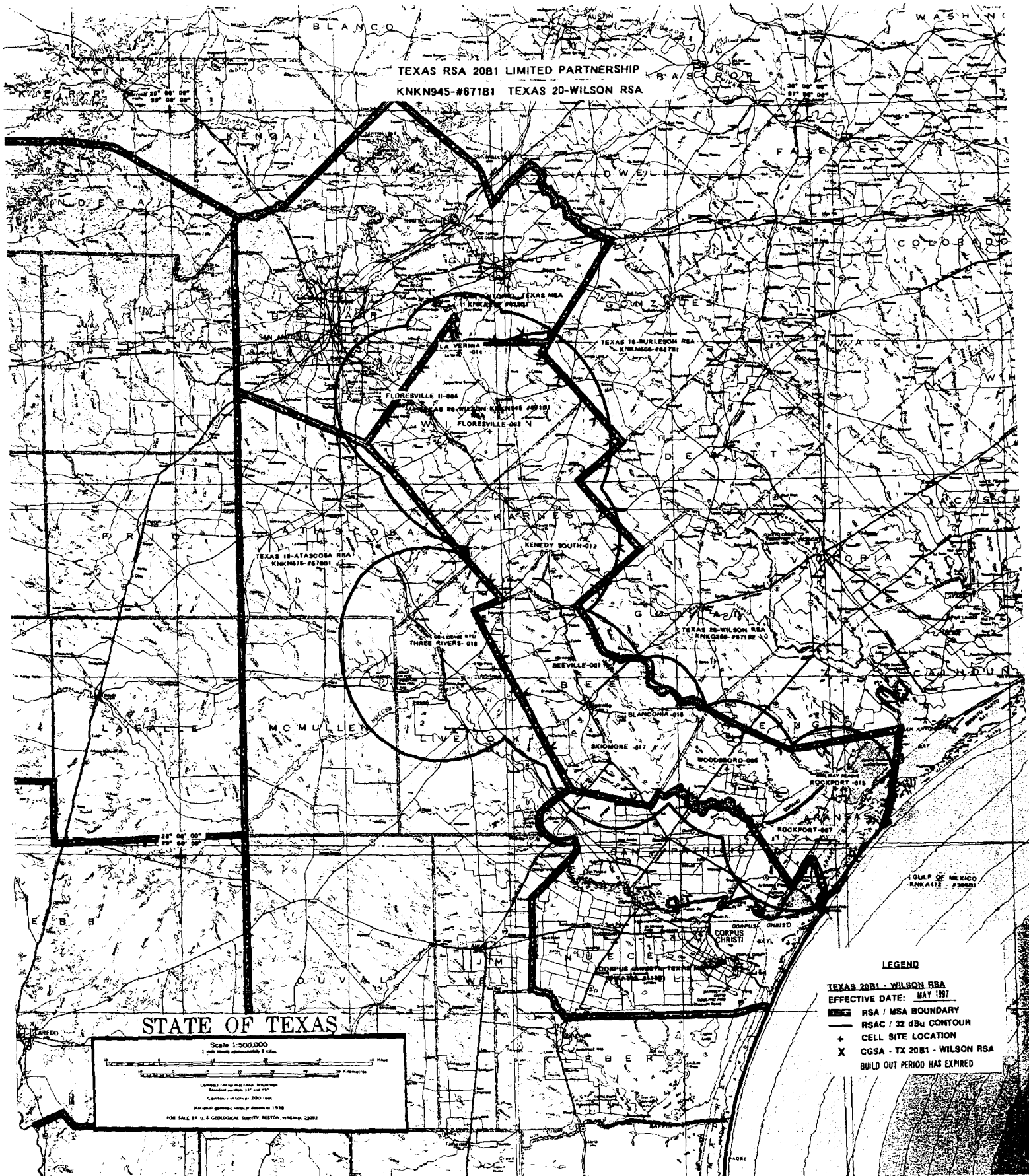
TEXAS RSA 19 LIMITED PARTNERSHIP
TEXAS 19 - ATASCOSA RSA MARKET #670B1 CALL SIGN KNKN576

LEGEND
TEXAS 19 - ATASCOSA RSA
MARKET #670B1 - CALL SIGN KNKN576
EFFECTIVE DATE: 1/20/11
XXXX RMAC / RMC BOUNDARY
----- RMAC / RMC BOUNDARY
● CBLA SITE LOCATION
X CBLA - SAN ANTONIO RSA
X CBLA - TX 19-ATASCOSA RSA
- - - - - FUTURE ROAD - 1412
○ FUTURE CBLA EXPANSION - T119

STATE OF TEXAS

Scale 1:500,000
1982
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All Rights Reserved

EXHIBIT 2



AFFIDAVIT OF CHARLES KRIZ

STATE OF TEXAS

COUNTY OF BEXAR

Charles Kriz, being duly sworn, deposes and states:

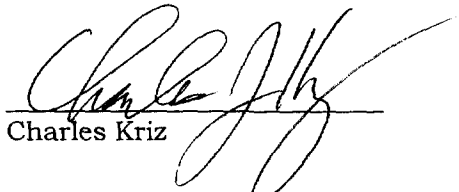
1. My name is Charles Kriz. I am over 21 years of age and am legally and mentally competent to make this affidavit. The facts stated herein are true and correct and are within my personal knowledge. I am a Radio Frequency Design Engineer for Southwestern Bell Wireless, Inc., (SWBW) South Texas Region, and office out of San Antonio, Texas. I have been engineering the design of cellular systems since October, 1994. I have a Bachelor of Science Degree in Mechanical Engineering Technology from Texas A & M University, College Station, TX. In this capacity, I work daily with applying the standards for determining reliable cellular service along the Texas Gulf Coastline.
2. In an effort to provide comments to the Federal Communications Commission's Second Further Notice of Proposed Rule Making in WT Docket No. 97-112 and CC Docket No. 90-6, specifically, to Section III, Paragraph 36, I conducted studies utilizing the CNET cellular system database, to determine the advantages and disadvantages of allowing existing authorizations to continue operation versus requiring all carriers to 'pull back' any SABs that extend into the proposed Coastal Zone."
3. Existing SWBW Reliable Service Area Contours (RSACs) for sites which presently extend *de minimis* into the Coastal Zone, provide cellular service where no other B-band cellular type service is available. Existing subscribers are able to place and receive calls in these areas. If these SAB's were pulled back, subscribers would probably pay higher prices for service if GMSA carriers ultimately serve these customers. The higher rates charged by GMSA carriers is well documented and is acknowledged by the Gulf Carriers as referenced in the Second Further Notice of Proposed Rule Making, Section III, Para. 34.
4. To evaluate the effects of pulling back existing SABs, I computed the best case scenarios for those sites affected. Following are my findings. Also attached as Exhibits 1-4 are the contour and coverage plots substantiating the following finding:
 - A. If Southwestern Bell Wireless is required to pull its contours out of the Gulf of Mexico, several key cell sites will be affected in the Corpus Christi MSA. These key sites will require changes ranging from reducing the ERP to turning the site off completely.

- B. In the Corpus Christi MSA, the following cell sites would need to be taken off the air: Port Aransas (#115), Galleon Bay (#116), and Mustang Island (#118). These sites are located very near to the Corpus Christi MSA/Gulf of Mexico GMSA boundary. It is not possible to reduce ERP or change the antenna configuration and not have the 32 dBu contours extend into the Gulf of Mexico. These three cell sites account for up to 5.7% of the market's total traffic. This is a significant reduction in the overall traffic capacity of the Corpus Christi MSA. These cell sites also provide service on Mustang Island, a very popular vacation area with resort condominiums. Without these sites, the signal level on Mustang Island would fall below -100 dBm. This signal level is inadequate to provide reliable service to our customers.
- C. The following two sites would require an ERP reduction: Flour Bluff (#108) and Aransas (#122). At the Flour Bluff site, the beta face ERP would need to be reduced from 100 watts to 16 watts. Also, the omni setup ERP would need to be reduced from 100 watts to 16 watts. The beta face ERP reduction would reduce the signal level below -90 dBm along areas of State Highway 358. At this signal level, it will be more difficult to use handheld phones (0.6 watt) in those areas. Also, the omni setup ERP reduction would negatively affect our customer's ability to place a call on the Flour Bluff site. Again, the omni setup ERP reduction would reduce the signal level below -90 dBm in certain areas. At the Aransas site, the beta face ERP would need to be reduced from 40 watts to 16 watts. This ERP reduction would degrade service along State Highway 361 and in the Redfish Bay.
- D. In the Texas 20 market, Rockport (#147) would also suffer from an ERP reduction. The ERP is presently at 100W and would need to be at 75W to keep the contours out of the Gulf of Mexico. This reduction would then decrease our coverage area by 9.5%. This would mean that customers in specific areas such as along highway 35 may not be able to place calls following the ERP reduction, especially those customers using portable phones. Currently this site is responsible for 16.47% of the total traffic in the Texas 20 market.
- E. In the Brownsville-Harlingen MSA, the South Padre Island cell site (#038) would need to be taken off the air. This site is located very near to the Brownsville-Harlingen MSA/Gulf of Mexico GMSA boundary. It is not possible to reduce ERP or change the antenna configuration and not have the 32 dBu contours extend into the Gulf of Mexico. Of all the sites in the Brownsville-Harlingen MSA, this cell site accounts for up to 12.5% of the market's total traffic. This is a significant reduction in the overall traffic capacity of the Brownsville-Harlingen MSA. This cell site provides service on Padre Island, a very popular vacation area with resort condominiums. Without this site, the signal level on Padre Island would fall below -100 dBm. This signal level is inadequate to provide reliable service to our customers.

- F. The Laguna Vista site would require an antenna change. Presently, the Laguna Vista site utilizes a PD10183 omnidirectional antenna. In order to pull the Laguna Vista contour out of the Gulf of Mexico, the antenna would be changed to a CVO-10800S offset-omni model pointed at a 270° azimuth. With this change, the signal level quality along State Highway 100 east of the Laguna Vista site will be significantly affected. In areas that are adequately covered now, the signal level will fall below -90 dBm to as low as -99 dBm. At this signal level, it will be more difficult to use handheld phones (0.6 watt) in those areas.
5. These calculations support the fact our contention that any "pulling back" of existing SAB's into the Coastal Zone would be detrimental to service presently provided to existing and proposed customers of SWBW.

Attachments:

1. Existing Corpus Christi MSA System Contours
2. Reduced Corpus Christi MSA System Contours if existing SABs extending into the Coastal Zone have to be reduced.
3. Existing Corpus Christi Coverage Plots
4. Corpus Christi Coverage Plots if existing SABs extending into the Coastal Zone have to be reduced.
5. Existing Brownsville-Harlingen MSA System Contours
6. Reduced Brownsville-Harlingen MSA System Contours if existing SABs extending into the Coastal Zone have to be reduced.
7. Existing Brownsville-Harlingen Coverage Plots.
8. Brownsville-Harlingen Coverage Plots if existing SABs extending into the Coastal Zone have to be reduced.
9. Existing TX RSA 20 System Contours
10. Reduced TX RSA 20 System Contours if existing SABs extending into the Coastal Zone have to be reduced.
11. Existing TX RSA 20 Coverage Plots
12. TX RSA 20 Coverage Plots if existing SABs extending into the Coastal Zone have to be reduced.


Charles Kriz

Subscribed and sworn to me this 29th day of May 1997.


Notary Public

